



All CHIPS on the Table: The HLED Goes “All-in” on Semiconductors and EV Supply Chains

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Executive Summary

Last week’s U.S.-Mexico High-Level Economic Dialogue (HLED) in Mexico City between senior government officials of Mexico and the United States focused directly on the bilateral implications of two major pieces of legislation recently signed into law by President Biden: The CHIPS and Science Act (CHIPS) and the Inflation Reduction Act (IRA). Together, these laws seek to develop resilient North American supply chains for semiconductors, batteries, strategic minerals, and electric vehicles and in the process may provide significant opportunities for investment and production in Mexico.

The CHIPS Act aims to promote American leadership in semiconductor manufacturing by providing federal incentives to encourage advanced research and development and to develop the domestic chip manufacturing supply chain. Essential to long term U.S. security and economic competitiveness, this supply chain can extend into allied countries such as Mexico where advanced industrial production is already taking place. The CHIPS Act also includes funds to help partner countries establish communications technologies and supply chain activities needed to integrate into a U.S.-centric semiconductor production chain. The Inflation Reduction Act’s clean energy provisions include subsidies



to produce North American electric vehicles from which Mexico's auto sector is well-positioned to benefit.

The senior leaders co-chairing the U.S. delegation to the HLED made clear the U.S.'s desire to involve Mexico as a key partner in the realignment of the semiconductor and high-tech global value chain. They stressed both the unique opportunity and the urgency with which Mexico, as a key partner in North America, must move to seize what Mexican Foreign Secretary Marcelo Ebrard himself publicly recognized as a "once in a lifetime opportunity." U.S. Secretary of Commerce Gina Raimondo challenged Mexico to identify specific incentives the country might offer to complement those offered through both the CHIPS and IRA legislation.

In our assessment, having participated in the inauguration of the HLED in 2013 and watching its evolution since, the meeting in Mexico City last week may be the first time that the HLED delivered on the promise of its original vision: advancement of a strategic partnership for the United States and Mexico to enhance their collective competitiveness within the larger North American enterprise. But having identified the opportunity, the proverbial devil is now in the details and in the ability of the partners, especially Mexico, to seize the moment. This Client Alert examines the opportunity and some of the challenges that await.

The CHIPS Act

Under the Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act, the U.S. government aims to develop the onshore domestic manufacturing of semiconductors seen as critical to U.S. competitiveness and national security. This is motivated by three things. First, recognition that global supply chains are operating in a new, less predictable climate that demands increased resilience across the board. Second, semiconductors are not merely inputs into thousands household items and automobiles. They are key components for future military and civilian technologies including artificial intelligence and 5G wireless and thus essential to U.S. national security and global competitiveness. Third, as COVID-19-related chip shortages made clear, only 12% of global chip production takes place in the United States while 75% of chips are manufactured in East Asia. Semiconductor production is expected to double in ten years, but, without a nudge from the CHIPS Act, only 6% of new chip-making capacity was

projected to be based in the U.S. whereas 40% of new global capacity was expected to be added in China.

The funds made available by the CHIPS Act include \$52.7 billion for semiconductor research, development, manufacturing, and workforce development. This includes \$39 billion in manufacturing incentives, \$13.2 billion for R&D and workforce development, and \$500 million to support partner government development of secure international communications technology and semiconductor supply chain activities. The CHIPS Act also includes a 25% Investment Tax Credit for capital expenses for manufacturing of semiconductors and related equipment, and it anticipates this incentive will be coupled with additional state and local governments incentives for the U.S. manufacturing of semiconductors.

To eliminate U.S. reliance on a global telecommunication supply chain centered on companies with putatively close ties to the Chinese Communist Party (e.g., Huawei), the CHIPS Act prohibits the use of U.S. funds to build advanced semiconductor manufacturing facilities in, and the sourcing of semiconductor material from, the Peoples Republic of China or other countries deemed a threat to U.S. national security. The CHIPS Act also requires recipients (foreign and domestic) to prove that semiconductor manufacturers' future investments will only be made in the United States or partnering countries and establishes strict protocols to monitor and ensure funding from the CHIPS Act will not support any investment or development in Chinese territory. Recipient companies are required to notify the Department of Commerce of any transactions being made in countries of concern to the U.S. government. Finally, the CHIPS Act includes new "clawback" provisions that prohibit beneficiaries of CHIPS funding or the investment tax credit from expanding semiconductor manufacturing in China for a period of ten years.

The Opportunity for North America

A recent [report](#) ranks the U.S. high in three out of the five critical factors in the production of semiconductors – synergies with existing footprints and ecosystems, access to skilled labor, and protection of intellectual property – but the U.S. is not competitive in two areas – labor costs and government incentives. That translates into approximately 30% higher cost of production in the U.S. relative to Taiwan, South Korea, or Singapore, and 37%-50% higher costs compared to China. The CHIPS Act directly addresses these

challenges by offering subsidies for semiconductor manufacturing in the United States as well as assistance to partner governments. This opens an opportunity for allied nations, especially Canada and Mexico, to work with the U.S. government to develop the semiconductor infrastructure needed to assemble and test chips, including critical R&D, workforce development, and production and supply chain capacity.

Much of this work is currently concentrated in a handful of Southeast Asian countries. The lower skilled assembly and test activities are concentrated in Malaysia, Vietnam, and the Philippines, with Singapore and Thailand undertaking these and other activities critical to the semiconductor supply chain. In addition, South Korea and Taiwan dominate production of the world's most advanced semiconductors. Global pressures, however, are encouraging firms to bring semiconductor production closer to home, including the need to cut transportation costs, deconcentrate production, and make supply chains resilient to withstand creeping global protectionism, increasing U.S.-China tensions, and future extreme events like COVID-19. According to a [McKinsey](#) study, 93% of companies are planning to make changes that strengthen and diversify their supply chains. For some, this involves dual sourcing of raw materials and increasing inventory of critical products, and for 40% this includes near shoring their supply chain with another 38% aiming to regionalize their entire supply chain. And in the specific case of Taiwan, U.S. reliance on its production of advanced semiconductors was recently deemed as “untenable and unsafe” by U.S. Commerce Secretary Raimondo.¹

Bringing chip manufacturing closer to home is apt to be a slow process, but one that presents a real opportunity for Mexico, which is well-positioned to provide supply chain support to U.S.-based recipients of government subsidies and tax credits and other direct U.S. government assistance through the CHIPS Act.

Mexico is the eighth largest producer of electronics in the world and is already working on semiconductor design, assembly, and testing in coordination with Intel, Skyworks, Texas Instruments, and Infineon Technologies, A.G. As the Inter-American Development Bank has recently [noted](#), many key elements of the semiconductor supply chain already

¹ Pike, L. (2022, August 25). Taiwan, China and the U.S.: Inside the fight to control the microchips that power your car and computer. Grid News. Retrieved August 27, 2022, from <https://www.grid.news/story/global/2022/08/11/taiwan-china-and-the-us-inside-the-fight-to-control-the-microchips-that-power-your-car-and-computer/>

exist in Mexico, including a well-educated but comparatively inexpensive labor force, a robust transportation infrastructure in Northern Mexico, and a stable macroeconomic setting. With Samsung, Intel, and Taiwan-based TSMC's recently announcing decisions to expand semiconductor production in Texas and Arizona, Mexico is well positioned to play an important role in the emerging value chain, especially with respect to "the labor-intensive, back-end assembly and testing" of semiconductors, "where chips are massively tested and packaged for delivery to the [new cross-border] technology verticals that demand them."

Mexican officials have wisely kept an eye on their northern neighbor's aims to attract additional chip manufacturing investment, and they have begun to position Mexico to benefit. Soon after the CHIPS Act was passed, the Mexican Finance ministry hosted a meeting with semiconductor companies to learn what Mexico needs to do to become a more attractive site for their supply chain activities. During the meeting, Economy Minister Tatiana Clouthier emphasized Mexico's interest in offering incentives to chip manufacturers to set up production in Mexico. To succeed in this endeavor, Mexico must invest in training a specialized workforce, in research and development, and in logistics infrastructure. These are tasks that may benefit from U.S. government financial assistance under the CHIPS Act and technical assistance in the form of biweekly meetings between U.S. and Mexican officials that will follow up on the agreements reached at the HLED to deepen supply chain integration. Mexico will also benefit from \$1.75-\$2.25 billion in Inter-American Development Bank loans to promote nearshoring and company relocation efforts. But Mexico itself must be prepared to commit its own resources to this strategic priority, which will be challenging given the constrained fiscal climate in which it currently operates.

But attracting significant investment into Mexico to support the vision for a North American value chain will require more than just financial incentives and promises from the government, and here is where we assess the real challenges come into play. First, Mexico urgently needs to improve the overall business climate. As Secretary Raimondo correctly noted at the HLED meetings, investors demand certainty, reliability, and transparency to risk the billions of dollars of investment needed to build this capital-intensive industry. Mexico's track record here in recent years is woefully lacking, and the AMLO administration's propensity to undermine long-term contracts and up-end well

established infrastructure and manufacturing plans almost by whim has shaken investor confidence to the core. To add insult to injury, the administration's widespread use of non-tariff barriers to trade—like excessive delays in regulatory approvals across sectors—further discourages investment in Mexico.

Another major challenge relates to security. Semiconductors and their components are extremely expensive, and companies are correctly nervous about transporting materials into, and around, Mexico given the current security challenges gripping the country. Mexico must convince investors that it can control the key transportation corridors and ensure the safety of both products and personnel associated with them. In our experience advising companies in this space, we can say without question that anxiety around security is a major factor influencing how global companies view doing business in Mexico. The recent HLED appears to have deferred these challenging issues to the upcoming bilateral security dialogue, but one way or another, Mexico must get on top of these issues.

Finally, the reality is that most companies with both the technical know-how and the capital to undertake such significant investments are publicly traded, and this means they are subject to intense pressure from investors and the capital markets to manage their carbon footprint. Whether these companies can manufacture, produce, and assemble the full supply chain components in an environmentally responsible manner is a key issue for them. Translation: Access to reliable, clean, and renewable energy throughout the manufacturing process is critical. The AMLO administration's open hostility to many private renewable projects in Mexico, together with its nationalistic policies that favor the state-owned CFE, which is increasingly burning dirty fuel acquired by PEMEX, is clearly at odds with this corporate imperative. The ongoing USMCA dispute over Mexico's energy policies were deftly set aside at the HLED, but once again, these issues cannot be ignored and must be resolved if Mexico is going to play a significant role in the semiconductor and telecommunications value chain.

The Inflation Reduction Act

The second major piece of U.S. legislation that should create investment opportunities in Mexico is the Inflation Reduction Act. As part of its climate change package of policies promoting investment in clean energy, the IRA provides incentives to expand the adoption

of electric vehicles (EVs) in the U.S. and aims to reduce the EV production chain's reliance on critical raw materials and battery components from China. The act includes a tax credit of up to \$7,500 for the purchase of a new electric vehicle *produced in North America*. Given that the global auto industry is already locating EV production in Mexico, the world's sixth largest producer of passenger vehicles, the Inflation Reduction Act should solidify Mexico's growing role in North American EV production.

The Inflation Reduction Act also requires that 40% of battery components be sourced from free trade partners. This includes the cobalt, nickel, and lithium that are essential to battery production. This could potentially steer increased investment in cobalt and nickel mining in Mexico. In the case of lithium, this provision is apt to benefit Chile's established lithium mining industry rather than Mexico nascent and state-owned lithium mining sector. But over time Mexico could benefit from increased investment and production of lithium as well.

Mexico would do well to consider the broad range of opportunities the IRA presents. In addition to stimulating the expanded production of EVs themselves, the legislation will also drive demand for the entire ecosystem and infrastructure that supports electrification, including upgrades to the grid, EV charging installations, and advances in the internet of things (IOT). With its existing expertise in the automotive and electronics industries, and with its impressive and growing engineering capacity, Mexico is well positioned to foment the development of entirely new and nascent sectors that should thrive in this new environment.

Conclusion

The close integration of the Mexican economy with its North American neighbor and Mexico's limited but tangible experience producing inputs into the semiconductor supply chain and producing electric vehicles means Mexico should be well-positioned to take advantage of the investment opportunities created by the CHIPS and the Inflation Reduction Acts. But Mexico has a lot of work to do, and the U.S. should hold Mexico's feet to the fire to ensure that this important opportunity is not lost. Mexico should not take this opportunity for granted, nor assume that investment will magically flow into the country just because of its privileged location. Other nations are fiercely competing for this spot, and investors are casting a wide net.



The Monarch team has spent collectively dozens of years working to promote Mexico as a strategic economic partner of the United States. From launching the HLED to working closely on the most cutting-edge policy challenges in the bilateral relationship, our team has worked with leading global manufacturers and their suppliers, helping them understand and access the Mexican market. We remain bullish about the opportunities the CHIPS and IRA legislation creates for Mexico, and we are excited to work with existing and new clients in the months and years ahead.

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